

What Is Claimed Is:

1 1. A computer system comprising:
2 a processor having an input, and responsive to a signal at said input,
3 reducing a power consumption of said processor; and
4 a power reduction circuit coupled to said input of said processor and
5 providing a signal to said input of said processor in response to a failure
6 condition affecting said processor such that the power consumption of said
7 processor is periodically reduced.

1 2. A computer system according to claim 1, wherein a first signal
2 level of the signal at the input of the processor stops an internal clock of the
3 processor.

1 3. A computer system according to claim 1, wherein said signal
2 provided to said input of said processor in response to said failure condition
3 comprises a periodic signal including at least a first signal level and a
4 second signal level.

1 4. A computer system according to claim 1, further comprising a
2 cooling fan directing air toward said processor, wherein said failure condition

3 affecting said processor corresponds to a reduced performance of said
4 cooling fan.

1 5. A computer system according to claim 4, said power reduction
2 circuit including a signal generator generating said periodic signal.

1 6. A computer system according to claim 5, wherein said signal
2 generator includes inputs corresponding to characteristics of said generated
3 periodic signal.

1 7. A computer system according to claim 5, wherein said signal
2 generator includes an input corresponding to a duty cycle of said generated
3 periodic signal and an input corresponding to a frequency or a period of said
4 generated periodic signal.

1 8. A computer system according to claim 1, wherein said power
2 reduction circuit detects a temperature of said processor, wherein said
3 failure condition affecting said processor is detected when said detected
4 temperature of said processor is above a predetermined temperature.

1 9. A computer system according to claim 1, wherein said power
2 reduction circuit includes a sensor detecting a temperature of said

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3 processor, wherein said failure condition affecting said processor is detected
4 when said sensed temperature of said processor is above a predetermined
5 temperature.

1 10. A computer system according to claim 9, wherein said sensor
2 comprises a temperature sensor embedded in a heat sink attached to said
3 processor.

1 11. A computer system according to claim 3, said power reduction
2 circuit including a switch providing said periodic signal to said input in
3 response to a presence of said failure condition affecting said processor,
4 said switch providing said second signal level to said input in response to an
5 absence of said failure condition affecting said processor.

1 12. A computer system according to claim 3, said power reduction
2 circuit including a multiplexor providing said periodic signal to said input in
3 response to a presence of said failure condition affecting said processor,
4 said multiplexor providing said second signal level to said input in response
5 to an absence of said failure condition affecting said processor.

1 13. A computer system according to claim 1, wherein said failure
2 condition affecting said processor is a thermal temperature condition

3 corresponding to an overtemperature condition of said processor at or near
4 said processor.

1 14. A computer system according to claim 1, said computer
2 system further comprising:

3 at least one additional processor each having an input,
4 wherein a power consumption of each processor is reduced in
5 response to a first signal level of the input of that processor and is not
6 reduced in response to a second signal level of the input of that
7 processor; and

8 at least one additional power reduction circuit, each said
9 additional power reduction circuit respectively corresponding to each
10 said at least one additional processor and providing a signal to said
11 input of said corresponding processor in response to a failure
12 condition affecting the corresponding processor, wherein said signal
13 provided to said input of said corresponding processor comprises a
14 periodic signal including at least the first signal level and the second
15 signal level.

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1 15. An apparatus for reducing a power consumption of a
2 processor, comprising:

3 a signal generator generating a failure condition signal
4 indicating a failure condition affecting said processor; and

5 a power reduction circuit responsive to said failure condition
6 signal and providing a periodic signal for periodically reducing a power
7 consumption of said processor.

1 16. An apparatus according to claim 15, wherein said apparatus
2 includes said processor, and said processor has a power consumption
3 reduction input, wherein said power reduction circuit provides said periodic
4 signal to said power consumption reduction input of said processor in
5 response to said failure condition signal.

1 17. An apparatus according to claim 16, wherein an internal clock
2 of the processor is stopped in response to the power consumption reduction
3 input of the processor.

1 18. An apparatus according to claim 15, further comprising a
2 cooling fan directing air toward said processor, wherein said failure condition
3 affecting said processor corresponds to a reduced performance of said
4 cooling fan.

1 19. An apparatus system according to claim 15, said power
2 reduction circuit including a signal generator generating said periodic signal.

1 20. An apparatus according to claim 15, wherein said power
2 reduction circuit includes a sensor detecting a temperature of said
3 processor, wherein said failure condition affecting said processor is detected
4 when said sensed temperature of said processor is above a predetermined
5 temperature.

1 21. An apparatus according to claim 20, wherein said sensor
2 comprises a temperature sensor embedded in a heat sink attached to said
3 processor.

1 22. An apparatus according to claim 16, said power reduction
2 circuit including a switch providing said periodic signal to said power
3 consumption reduction input in response to a presence of said failure
4 condition affecting said processor.

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1 23. An apparatus according to claim 16, said power reduction
2 circuit including a multiplexor providing said periodic signal to said power
3 consumption reduction input in response to a presence of said failure
4 condition affecting said processor.

1 24. An apparatus according to claim 15, wherein said failure
2 condition affecting said processor is a thermal failure condition
3 corresponding to an overtemperature condition of said processor at or near
4 said processor.

1 25. A method of reducing a power consumption of a processor,
2 comprising steps of:
3 detecting a failure condition affecting said processor; and
4 periodically reducing a power consumption of said processor in
5 response to said step of detecting said failure condition.

1 26. A method according to claim 25, wherein said step of
2 periodically reducing the power consumption of said processor comprises
3 periodically stopping an internal clock of said processor.

1 27. A method according to claim 25, further comprising a step of
2 measuring a temperature at or near said processor and providing said signal

3 indicating a failure condition affecting said processor in response to said
4 measured temperature.

1 28. A method according to claim 25, further comprising a step of
2 providing said signal indicating a failure condition affecting said processor in
3 response to a reduction in performance of a cooling fan.

1 29. A method according to claim 25, wherein said failure condition
2 affecting said processor corresponds to an overtemperature condition of
3 said processor at or near said processor.

1 30. A method according to claim 25, wherein said failure condition
2 affecting said processor is a thermal failure condition affecting a temperature
3 of said processor.

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